Ryan J. Gallagher

Network Science Ph.D. Student Merging Text and Networks for Computational Social Science

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Education

Northeastern University — *Boston, MA*

Ph.D. Network Science, *4.0/4.0* — *Sept. 2017 – PRESENT*

Advisor: Dr. Brooke Foucault Welles

University of Vermont — *Burlington, VT*

M.S. Applied Mathematics, *4.0/4.0* — *Aug. 2015 – May 2017*

Advisors: Prof. Christopher M. Danforth, Prof. Peter Sheridan Dodds

Graduate Certificate: Complex Systems

University of Connecticut — *Storrs, CT*

B.A. Mathematics, *Summa Cum Laude* — *Aug. 2011 – May 2015*

Minor: Statistics

Experience

Research Assistant — *Boston, MA*

Network Science Institute, Northeastern University — *Aug. 2017 – PRESENT*

Research Assistant — *Burlington, VT*

Vermont Complex Systems Center, University of Vermont — *Aug. 2015 – Aug. 2017*

Visiting Research Assistant — *Los Angeles, CA*

Information Sciences Institute, University of Southern California — *Jun. 2016/2017 – Aug. 2016/2017*

Research Fellow — *Raleigh, NC*

Research Experience for Undergraduates (REU), North Carolina State University — *May 2014 – Jul. 2014*

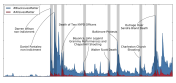
Research Fellow — *East Lansing, MI*

Research Experience for Undergraduates (REU), Michigan State University — *Jun. 2013 – Jul. 2013*

Peer-Reviewed Publications

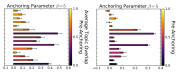
Journal Articles

Divergent Discourse of Protests and Counter-Protests: #BlackLivesMatter and #AllLivesMatter



Ryan J. Gallagher, Andrew J. Reagan, Christopher M. Danforth, Peter Shreidan Dodds. *PLoS ONE*, 13(4):e0195644, 2018.

Anchored Correlation Explanation: Topic Modeling with Minimal Domain Knowledge



Ryan J. Gallagher, Kyle Reing, David Kale, Greg Ver Steeg. *Transactions of the Association for Computational Linguistics (TACL)*. 5:529–542, 2017.

Presentations

Talks

Anchored Correlation Explanation: Topic Modeling with Minimal Domain Knowledge — *Princeton, NJ*

Text as Data 2017, Princeton University — *Oct. 2017*

The Topic Topology of "Slacktivist" Networks — *Indianapolis, IN*

Information, Self-Organizing Dynamics and Synchronization on Networks Satellite Symposium, NetSci 2017 — *Jun. 2017*

Guiding Topic Models via Anchored Correlation Explanation — *Los Angeles, CA*

Machine Learning and Data Science Seminar, Information Sciences Institute — *Aug. 2016*

An Introduction to Natural Language Processing — *Storrs, CT*

Introduction to Mathematical Modeling Invited Speaker, University of Connecticut — *Dec. 2015*

Polygon Curvature Flow — *San Antonio, TX*

AMS Session on Convex and Discrete Geometry, Joint Math Meeting 2015 — *Jan. 2015*

Harmonic Functions and Random Walks on Spheres — *Hartford, CT*

MAA Session #18, MathFest 2013 — *Aug. 2013*

Poster Sessions

Anchored Correlation Explanation: Topic Modeling with Minimal Domain Knowledge — *Burlington, VT*

UVM Student Research Poster Conference, University of Vermont — *Apr. 2017*

The Discourse and Dynamics of #BlackLivesMatter and #AllLivesMatter — *Burlington, VT*

UVM Student Research Poster Conference, University of Vermont — *Apr. 2016*

Do Polygons Become Asymptotically Regular Under Flow by Curvature? — *San Antonio, TX*

MAA Undergraduate Poster Session, Joint Math Meeting 2015 — *Jan. 2015*

Random Walks on Spheres — *Baltimore, MD*

MAA Undergraduate Poster Session, Joint Math Meeting 2014 — *Jan. 2014*

Teaching

Math Instructor — *Burlington, VT*

Department of Mathematics and Statistics, University of Vermont — *Aug. 2015 – Dec. 2016*

- Fall 2016, MATH19 Fundamentals of Calculus I (2 sections)
- Spring 2016, MATH17 Applications of Finite Math
- Fall 2015, MATH17 Applications of Finite Math

Math Help Session Tutor — *Burlington, VT*

Department of Mathematics and Statistics, University of Vermont — *Aug. 2015 – May 2017*

- Algebra, Precalculus, Finite Math, Calculus I, Calculus II

Course Grader — *Burlington, VT*

Department of Mathematics and Statistics, University of Vermont — *Aug. 2016 – Dec. 2016*

- Fall 2016, CSYS300 Principles of Complex Systems

Supplemental Instruction Leader — *Storrs, CT*

UConn Academic Achievement Center, University of Connecticut — *Jan. 2015 – May 2015*

- Spring 2015, MATH1132Q Calculus II

Professional Service

Peer Reviewer — *Boston, MA*

- PLoS ONE — *ONGOING*
- Socius
- Journal of Complex Networks
- International Communication Association (ICA)

Vice President — *Boston, MA*

Network Science Graduate Student Association, Northeastern University — *May 2018 – PRESENT*

Organizer — *Boston, MA*

Network Science Institute Journal Club, Northeastern University — *Jan. 2018 – PRESENT*

Social Media Coordinator — *Boston, MA*

Network Science Institute, Northeastern University — *Mar. 2018 – PRESENT*

Social Media Coordinator — *Boston, MA*

CompleNet 2018 — *Mar. 2018*

Volunteer — *Boston, MA*

Caucus for Women in Network Science (WiNS), Complenet 2018 — *Jan. 2018 – Mar. 2018*

Co-Organizer — *Burlington, VT*

AM I A (All Math is Applied) Seminar, University of Vermont — *Aug. 2016 – May 2017*

Honors & Awards

Honors

2018 **Invited Participant**, Summer Institute in Computational Social Science (SiCSS), Duke University *Durham, NC*
2017 **Outstanding Masters Thesis Honorable Mention**, University of Vermont *Burlington, VT*
2015 **Honorary Inductee**, Pi Mu Epsilon Mathematics Honor Society, University of Connecticut *Storrs, CT*

Scholarships

2017 **Nam Sang Kil Scholarship in Mathematics**, Department of Mathematics, University of Vermont *Burlington, VT*
2014 **Bernard Sippin '52 Scholarship**, Department of Mathematics, University of Connecticut *Storrs, CT*
2014 **Orange Scholarship**, The Homer Fund, Home Depot *Storrs, CT*

Awards

2017 **SYNS Travel Grant**, Society of Young Network Scientists, NetSci 2017 *Indianapolis, IN*
2015 **Outstanding Presentation Award**, Mathematical Association of America, Joint Math Meeting 2015 *San Antonio, TX*
2015 **MAA Travel Grant**, Mathematical Association of America, Joint Math Meeting 2015 *San Antonio, TX*
2014 **MAA Travel Grant**, Mathematical Association of America, Joint Math Meeting 2014 *Baltimore, MD*

Relevant Skills

Programming Python (including NumPy, SciPy, Scikit-Learn, Gensim, spaCy, NetworkX), MATLAB, Bash
Statistical Regression and time series analysis, network analysis, classification, clustering, statistical model evaluation
Natural Language Topic modeling, sentiment analysis, phrase extraction, word embedding methods